

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
31 March 2005 (31.03.2005)

PCT

(10) International Publication Number
WO 2005/028174 A2

(51) International Patent Classification⁷: **B29B 15/10.**
D06M 15/55, 13/11, 13/196, 11/52, 11/09

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(21) International Application Number:

PCT/US2004/019188

(22) International Filing Date: 16 June 2004 (16.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/478,936 16 June 2003 (16.06.2003) US
60/490,556 28 July 2003 (28.07.2003) US

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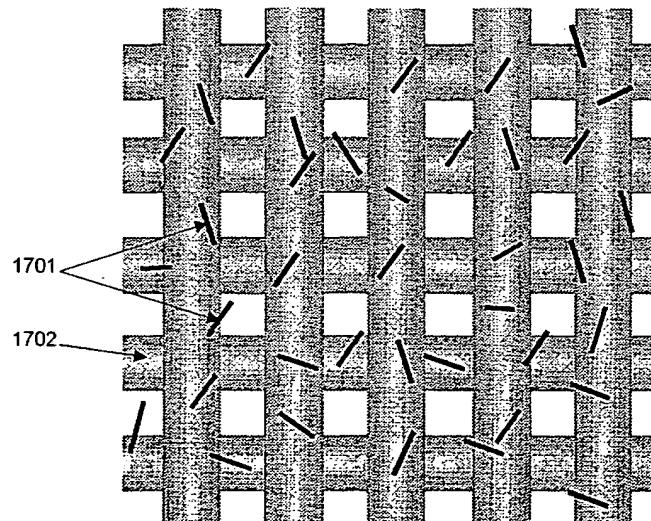
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: FABRICATION OF CARBON NANOTUBE REINFORCED EPOXY POLYMER COMPOSITES USING FUNCTIONALIZED CARBON NANOTUBES



(57) Abstract: The present invention is directed to methods of integrating carbon nanotubes into epoxy polymer composites via chemical functionalization of carbon nanotubes, and to the carbon nanotube-epoxy polymer composites produced by such methods. Integration is enhanced through improved dispersion and/or covalent bonding with the epoxy matrix during the curing process. In general, such methods involve the attachment of chemical moieties (i.e., functional groups) to the sidewall and/or end-cap of carbon nanotubes such that the chemical moieties react with either the epoxy precursor(s) or the curing agent(s) (or both) during the curing process. Additionally, in some embodiments, these or additional chemical moieties can function to facilitate dispersion of the carbon nanotubes by decreasing the van der Waals attractive forces between the nanotubes.

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Published:

— without international search report and to be republished upon receipt of that report

Declaration under Rule 4.17:

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